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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

COOKE, COLLEEN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 04/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,989

Applicant(s)

HOSTE ET AL.

Examiner

Colleen P Cooke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-26,33-38 and 43-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-26,33-38 and 43-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Arguments

Applicant's arguments filed 3/1/03 have been fully considered but they are not persuasive.

Applicant argues with respect to the rejection of claims 21 and 35 under 35 USC 122 as indefinite that 30% silver nitrate results in "about 20%" silver in the applied coating. This may be true, however, the disclosed silver nitrate range is "about 20% to 30% by weight" which would correspond to a silver content of 12.7% to "about" 20%, which does not support the "up to 30%" silver. In addition, applicant has not address the other facet of the 112 rejection, which is drawn to the fact that the current claim language describes silver begin applied in a certain percent when really silver nitrate, and not pure silver as claimed, is being applied.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The applicant argues at length the perceived deficiencies of Cukausas, the secondary reference in the rejection, without taking into account the teachings of the primary references and the motivation supplied to modify the primary reference with a selected teaching of the secondary reference.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

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USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the applicant argues that the primary reference, Chen et al., claims to produce good electrical and thermal conductivity and thus one would not be motivated to further investigate improving either.

In response to applicant's argument that Cukausas is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both references are concerned with thermal spraying of a YBCO coating onto a substrate.

The applicant presents argument drawn only to the rejection of claims 18 and 33 under 35 USC 103 as unpatentable over Chen et al. in view of Cukausas, with no mention of the rejections made of remaining claims 19-26 and 34-38.

Information Disclosure Statement

The previous action stated that the IDS filed 4/11/01 would not be considered because it does not include a concise explanation of the relevance. For the references to be considered, the applicant needs to submit a new IDS that conforms to Rule 1.97. The effort put forth in the response filed 3/1/03 to explain the relevance does not comply with Rule 1.97 c.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21, 33, 35, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 21 and 35 claims that "up to 30% silver" is included in the metal oxides which are sprayed upon a substrate to form a coating. This limitation is unclear because the specification clearly describes (see pages 18-19, lines 28-1) the presence of 20-30% by weight of silver nitrate or oxide added to the metal oxides which are sprayed on, and not pure silver as the claim describes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-26 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5196400), in view of Cukauskas ("The properties of YBCO thin films with silver doping prepared by spray pyrolysis" J. Appl. Physics 1990).

Regarding claims 33 and 18, Chen et al. teaches the application of a YBCO coating to a substrate, which may be a target for magnetron sputtering (Column 3, lines 52-57). Chen et al. further teaches that the coating may be applied by plasma spraying and may produce coating to

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0.2 inches (Columns 3 and 4, lines 64-66 and 13-15 respectively). Chen et al. does not teach the addition of a noble metal to the coating.

In addition, with regards to claim 18, the instantly claimed product is a product by process. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*, 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

Cukauskas teaches a similar spray coating process for YBCO, where small amounts of silver are included in the precursor solution that is sprayed (see paragraph 2).

Chen et al. and Cukauskas are analogous art because they are from the same field of endeavor, which is thermal spray coatings of YBCO. It would have been obvious to modify the coating and method of Chen et al. by adding silver because Cukauskas teaches that the addition of silver is beneficial to the morphology of the film and makes thermal spraying more applicable for large scale applications (see abstract, conclusions and also paragraph 2).

Regarding claim 19, both references teach applying a superconductive precursor. The presence of superconductive phase as deposited is inherent in the deposition process described.

Regarding claims 20, 21, 34-35, and 43-44, Cukauskas teaches adding silver by adding between 0.02 mole/l and 0.05 mole/l of AgNO_3 to a precursor solution (see paragraph 3).

Regarding claims 22 and 23, the limitation that the composite is a target for a sputtering magnetron is simply an intended use of the composite claimed. Regardless, Chen et al. teaches that the coated substrate may indeed be a target for a sputtering magnetron (Column 3, lines 52-57) and that the target of such is cylindrical (Column 3, lines 21-22).

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Regarding claims 24-26, the properties claimed are material properties which would be expected to be inherent in the product. Thus as the product made by the combination of Chen et al. and Cukauskas is the same as that which is claimed, it would be expected to have the same properties. Furthermore, Chen et al. teaches that poor conductivity of heat and electricity are a problem of concern in the manufacture of superconducting materials for targets of sputtering magnetrons (Columns 1-2, lines 60-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize these properties, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize both thermal conductivity and electrical conductivity by the reasoned explanation that Chen et al. teaches such is necessary and desirable for such targets.

Regarding claim 36, Chen et al. teaches that, by the definition of plasma spraying, the method includes spraying powder through a nozzle (Columns 3-4, lines 64-1).

Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5196400), in view of Cukauskas ("The properties of YBCO thin films with silver doping prepared by spray pyrolysis" J. Appl. Physics 1990) as applied to claim 33 above, and further in view of applicant's admitted prior art (AAPA).

Chen et al. and Cukauskas teach the method of coating as described with respect to claim 33 above. Neither teaches using cryogenic cooling. However, applicant discloses that it is already known in the prior art to cool the substrate (page 1, lines 11-13), that flame-sprayed substrates need to be cooled (page 1, lines 23-24), and further that rapidly cooling of flame-

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sprayed coatings produced dense layers, particularly when using cryogenic gas (page 2, lines 1-3). Given these teachings are admitted by the applicant as known in the art, the cooling step using cryogenic liquid is obvious.

Regarding claims 45 and 46, Cukauskas teaches adding silver by adding between 0.02 mole/l and 0.05 mole/l of AgNO_3 to a precursor solution (see paragraph 3).

Chen et al., Cukauskas, and AAPA are analogous art because they are from the same field of endeavor, which is thermally sprayed coating. It would have been obvious to modify the method of Chen et al. by cooling the substrate as described because doing so may produce a denser coating and also counter-act the effects of the high temperatures associated with such application techniques.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this or earlier communications from the examiner should be directed to Colleen Cooke, whose telephone number is 703-305-1136. She can normally be reached Monday-Thursday from 7:15-5:45pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Thomas Dunn, can be reached at 703-308-3318. The official fax number for the organization where this application or proceeding is assigned is 703-305-6078. The unofficial fax number for this examiner is 703-746-3048.

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is 703-308-0661.

CPC 4/1/2003



TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700